and hydroquinone monomethyl ether (0.18 g) were mixed in a liter, 4-neck flask equipped with thermometer, stirrer, vacuum adapter and an inlet. Two traps, one cooled with ice and the next with dry ice, were connected in series with the vacuum outlet. The mixture 5 was heated to 60° C.; then vacuum was applied in such a manner as to maintain the temperature of the reaction mixture at about 65° C. The reaction was continued with stirring under about 29" of Hg vacuum for about 3½ hours. The polyene product, predominantly of the 10 formula:

-continued

Components	Parts by Weight
Pentaerythritol tetrakis (β-mercaptopropionate),	
commercially available	180.0
Benzophenone	4.44
Stabilizer package	0.076

The Formulations X and Y were made up by dissolving the photosensitizer and stabilizers in the polythiol with warming at 60° C. Thereafter, a room temperature,

$$\begin{array}{c} \text{CH}_{3}\text{-O-CH}_{2} & \text{N} & \text{CH}_{2}\text{-O-CH}_{2}\text{CH}_{2}\text{CH}_{2}\text{CH}_{2}\text{CH}_{2}\text{CC}-\text{CH}=\text{CH}_{2} \\ \text{O} & \text{N-C} & \text{C-N} \\ \text{CH}_{2}\text{=CH-COCH}_{2}\text{CH}_{2}\text{CH}_{2}\text{-O-CH}_{2} & \text{N} & \text{CH}_{2}\text{-O-CH}_{2}\text{CH}_{2}\text{CH}_{2}\text{CC}-\text{CH}=\text{CH}_{2} \\ \text{C} & \text{O} & \text{O} & \text{O} \\ \text{CH}_{3}\text{-O-CH}_{2}\text{-N-CH}_{2}\text{-O-CH}_{2}\text{CH}_{2}\text{CH}_{2}\text{CH}_{2}\text{CC}-\text{CH}=\text{CH}_{2} \\ \end{array}$$

will hereinafter be referred to as Polyene J.

EXAMPLE 17

A photocurable formulation was made up from the following ingredients:

20 g of Polyene J from Example 16;

11.6 of "Mercaptate Q-43";

0.01 g of stabilizer package;

0.32 g of benzoin tetrahydropyranyl ether; this will be referred to as Formulation W.

The above formulation was made up by dissolving the photosensitizer and stabilizers in the polythiol with warming followed by mixing this solution with the 35 polyene.

A 0.2 mil thickness of the formulation was roller-coated onto a white base coated, cold-rolled steelplate having a thickness of 22 mils. The thus coated plate was then passed at 100 ft per minute through a Radiant 40 Products UV curing oven containing three UV lamps whose major spectral lines were all in the range 2,500 to 4,000 Angstroms. Following curing the plate was placed in an oven at 450° F. for 15 minutes. Upon removal from the oven the plate was cooled to room 45 temperature in air and then a visual observation was made to detect yellowing. The coating of Formulation W was rated 1+ on a scale of 0 (no yellowing) to 5 (a complete dark yellow color).

EXAMPLE 18

The following UV curable formulations were made up for a comparative yellowing test after high temperature baking:

FORMULATION X

Components	Parts by Weight	
Triallyl isocyanurate	96.0	•
Pentaerythritol tetrakis (β -mercaptopropionate),		
commercially available	144.0	60
Benzoin Tetrahydropyranyl ether	0.6	
Stabilizer package	0.3	

FORMULATION Y

Components	Parts by Weight
Polyene D from Example 5	200.0

the polyene was added to the polythiol with stirring. The formulations showed no change in viscosity over a 48 hour period. A 0.2 mil thickness of each formulation was roller-coated onto a white base coated, cold-rolled steelplate having a thickness of 22 mils. The thus coated plates were then passed at 100 ft per minute through a 30 Radiant Products UV curing oven containing three UV lamps whose major spectral lines were all in the range 2,500 to 4,000 Angstroms. Following curing, the plates were placed in an oven at 450° F. for 15 minutes. Upon removal from the oven the plates were cooled to room temperature in air and then a visual observation was made to detect yellowing. The coatings were rated from 0 (no yellowing) to 5 (a complete dark yellow color), with a rating of 0 to 1 being commercially acceptable. The coating of Formulation X was rated 3, and the coating of Formulation Y was rated 4.

I claim:

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1. The process of forming a non-yellowing, cured polythioether heat stable at 450° F. for at least 15 minutes which comprises admixing a composition comprising a polythiol, a photoinitiator and a polyene of the formula:

wherein R are all the same member of the group consisting of

$$CH_2$$
= $CHCH_2$ -; CH_2 = $CR'COCH_2CH_2$ - and

$$\begin{array}{c}
O \\
\parallel \\
CH_2=CR'COCH_2CH_2CH_2CH_2-;
\end{array}$$

R₁is —CH₃ or R, and R' is —CH₃ or H and thereafter exposing said composition to UV radiation.